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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,512	08/14/2003	Thomas O. Melrose	3123-509	3811

32093 7590 11/01/2005

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EXAMINER	
NEGRON, DANIELL L	
ART UNIT	**PAPER NUMBER**
2651	

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/642,512	Applicant(s) MELROSE ET AL.	
	Examiner Daniell L. Negrón	Art Unit 2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *38-137* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *78-127* is/are allowed.

6)☒ Claim(s) *38-41,45-50,55-61,65-71,75-77,88-91,95-97,128-130 and 135-137* is/are rejected.

7)☒ Claim(s) *42-44,48,51-54,62-64,72-74 and 131-134* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 July 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "circumferentially spaced spirals" must be shown or the feature canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 38, 39, 41, 45-49, 55-59, 61, 65-69, 71, 75-77, 128, 129, and 135-137 are rejected under 35 U.S.C. 102(e) as being anticipated by Szita et al U.S. Patent No. 6,751,046.

Regarding claim 38, Szita et al disclose a method for self-servo writing in a disk drive, wherein the disk drive (300) includes a transducer (310) and a disk (302), the transducer reads data from and writes data to the disk, the disk includes tracks, the tracks include servo sectors, embedded runout correction (ERC) values (i.e., correction factors) compensate for repeatable runout (RRO) in the tracks, and a position error signal (PES) positions the transducer relative to tracks, the method comprising providing a reference pattern (i.e., ruler) on the disk, generating a PES (i.e., position information) using the transducer to read the reference pattern during a revolution of the disk (column 6, lines 8-12), self-writing servo burst on the disk using the transducer during the revolution of the disk wherein the PES indicates RRO for the servo burst (column 5, lines 30-33), calculating an ERC value (i.e., adapting correction factor) for the servo burst using the PES, and storing the ERC value on the disk (column 5, lines 53-57).

Regarding claim 39, Szita et al disclose a method for self-servo writing in a disk drive, wherein the reference pattern is a temporary pattern (column 4, lines 58-59).

Regarding claim 41, Szita et al disclose a method for self-servo writing in a disk drive, including self-writing the servo burst using the PES to position the transducer. Szita et al uses the PES determined in the calibration step (column 6, lines 8-12) to determine a correction factor used for self-writing the servo bursts (column 5, lines 30-33).

Regarding claim 45, Szita et al disclose a method for self-servo writing in a disk drive, including performing the method on a sector-by-sector basis for each servo sector in a track (column 5, 47-57).

Regarding claims 46 and 47, Szita et al disclose a method for self-servo writing in a disk drive, including calculating the ERC value without reading the servo burst and without reading a final servo pattern (column 5, lines 30-33).

Regarding claims 48, 49, and 55-57, claims 48, 49, and 55-57 have limitations similar to those treated in the above rejections of claims 38, 39, and 45-47, and are met by the reference as discussed above.

Regarding claim 58, Szita et al disclose a method for self-servo writing in a disk drive, wherein the disk drive (300) includes a transducer (310) and a disk (302), the transducer reads data from and writes data to the disk, the disk includes tracks, the tracks include servo sectors, embedded runout correction (ERC) values (i.e., correction factors) compensate for repeatable runout (RRO) in the tracks, and a position error signal (PES) positions the transducer relative to tracks, the method comprising providing a reference pattern (i.e., ruler) on the disk, self-writing A and B servo bursts on the disk using the transducer, wherein the servo bursts are radially offset, circumferentially staggered servo bursts that form an A, B servo burst pair (Fig. 9), generating a PES (i.e., position information) using the transducer to read the reference pattern

after self-writing the A servo burst and before self-writing the B servo burst, wherein the PES indicates RRO for the B servo burst (column 5, lines 30-37), calculating an ERC value for the B servo burst (i.e., adapting correction factor) using the PES, and storing the ERC value on the disk (column 5, lines 53-57).

Regarding claims 59, 61, and 65-67, claims 59, and 65-67 have limitations similar to those treated in the above rejections of claims 38, 39, and 45-47, and are met by the reference as discussed above.

Regarding claims 68, 69, 75, 76, and 77, claims 68, 69, 75, 76, and 77 have limitations similar to those treated in the above rejections of claims 58, 59, 61, and 65-67, and are met by the reference as discussed above.

Regarding claim 71, Szita et al disclose a method for self-servo writing in a disk drive, wherein the servo bursts define a track centerline. It is considered that Szita et al discloses servo bursts which provide servo information which define the centerline of a track (see Fig. 5 and disclosure thereof for details).

Regarding claims 128, 129, and 135-137, Apparatus claims 128, 129, and 135-137 are drawn to the apparatus corresponding to the method of using same as claimed in claims 38, 39, and 45-47. Therefore apparatus claims 128, 129, and 135-137 correspond to method claims 38, 39, and 45-47, and are rejected for the same reasons of anticipation as used above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 40, 50, 60, 70, 88-91, 95-97, and 130 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szita et al U.S. Patent No. 6,751,046 in view of Codilian et al U.S. Patent No. 6,091,564.

Regarding claim 40, Szita et al disclose a method comprising all the limitations of claim 38 as discussed above but fail to show wherein the reference pattern is circumferentially spaced spirals.

Codilian et al however, disclose a method of self-servo writing in a disk drive wherein a reference pattern is a spiral on the disk surface which is used for the purpose of writing servo bursts with reduced write time (see Fig. 13 and disclosure thereof and abstract).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the methods of Szita et al and Codilian et al in order to obtain a method for self-servo writing wherein the servo writing write time is reduced and storage space is maximized.

Regarding claims 50, 60, and 70, claims 50, 60, and 70 have limitations similar to those treated in the above rejections, and are met by the references as discussed above.

Regarding claims 88-91 and 95-97, claims 88-91 and 95-97 have limitations similar to those treated in the above rejections, and are met by the references as discussed above.

Regarding claim 130, Apparatus claim 130 is drawn to the apparatus corresponding to the method of using same as claimed in claim 40. Therefore apparatus claim 130 corresponds to method claim 40, and is rejected for the same reasons of obviousness as used above.

Allowable Subject Matter

6. Claims 42-44, 48, 51-54, 62-64, 72-74, and 131-134 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 78-127 are allowed.

8. The following is an examiner's statement of reasons for allowance:

Regarding claims 78-87, claim 78 shows the method for self-servo writing in a disk drive, wherein the disk drive includes a transducer and a disk, the transducer reads data from and writes data to the disk, the disk includes tracks, the tracks include servo sectors, embedded runout correction (ERC) values compensate for repeatable runout (RRO) in the tracks, and a position error signal (PES) positions the transducer relative to tracks, the prior art alone or in combination fail to disclose the method comprising the steps of providing a reference pattern on the disk; then, self-writing a first servo burst on the disk using the transducer while the transducer is at a first radial position during a first revolution of the disk; then, generating a PES using the transducer to read the reference pattern while the transducer is at a second radial position during a second revolution of the disk; then, self-writing a second servo burst on the disk using the transducer while the transducer is at the second radial position during the second revolution of the disk, thereby trimming the first servo burst and creating a burst seam between the servo bursts that is radially aligned with circumferential edges of the servo bursts, wherein the PES

indicates RRO of the burst seam, calculating an ERC value for the burst seam using the PES; and storing the ERC value on the disk.

Regarding claims 98-107, claim 98, shows the method for self-servo writing in a disk drive, wherein the disk drive includes a transducer and a disk, the transducer reads data from and writes data to the disk, the disk includes tracks, the tracks include servo sectors, embedded runout correction (ERC) values compensate for repeatable runout (RRO) in the tracks, and a position error signal (PES) positions the transducer relative to tracks, the prior art alone or in combination fail to disclose the method comprising the steps of providing a temporary reference pattern on the disk, wherein the reference pattern includes first and second circumferentially spaced spirals; then self-writing a final first servo burst on the disk using the transducer while the transducer is at a first radial position; then generating a PES using the transducer to read the first spiral while the transducer is at a second radial position; then self-writing a final second servo burst on the disk using the transducer while the transducer is at the second radial position, wherein the servo bursts are radially offset, circumferentially staggered servo bursts that form a servo burst pair, and the PES indicates RRO for the second servo burst; calculating an ERC value for the second servo burst using the PES; and storing the ERC value on the disk.

Regarding claims 108-117, claim 108, shows the method for self-servo writing in a disk drive, wherein the disk drive includes a transducer and a disk, the transducer reads data from and writes data to the disk, the disk includes tracks, the tracks include servo sectors, embedded runout correction (ERC) values compensate for repeatable runout (RRO) in the tracks, and a position error signal (PES) positions the transducer relative to tracks, the prior art alone or in combination fail to disclose the method comprising the steps of providing a temporary reference

pattern on the disk, wherein the reference pattern includes first and second circumferentially spaced spirals; then generating a PES using the transducer to read the first spiral while the transducer is at a radial position during a revolution of the disk; then self-writing a final servo burst in a servo sector in a track using the transducer while the transducer is at the radial position during the revolution of the disk, wherein the PES indicates RRO for the servo burst; calculating an ERC value for the servo sector using the PES; storing the ERC value in the servo sector; and then self-writing servo information in other tracks on the disk.

Regarding claims 118-127, claim 118, shows the method for self-servo writing in a disk drive, wherein the disk drive includes a transducer and a disk, the transducer reads data from and writes data to the disk, the disk includes tracks, the tracks include servo sectors, embedded runout correction (ERC) values compensate for repeatable runout (RRO) in the tracks, and a position error signal (PES) positions the transducer relative to tracks, the prior art alone or in combination fail to disclose the method comprising the steps of providing a temporary reference pattern on the disk, wherein the reference pattern includes first and second circumferentially spaced spirals; then self-writing a final first servo burst in a servo sector in a track using the transducer while the transducer is at a first radial position; then generating a PES using the transducer to read the first spiral while the transducer is at a second radial position', then self-writing a final second servo burst in the servo sector using the transducer while the transducer is at the second radial position, thereby trimming the first servo burst and creating a burst seam between the servo bursts that is radially aligned with circumferential edges of the servo bursts and located in the servo sector, wherein the PES indicates RRO for the burst seam; calculating an

ERC value for the servo sector using the PES; storing the ERC value in the servo sector; and then self-writing servo information in other tracks on the disk.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniell L. Negrón whose telephone number is 571-272-7559. The examiner can normally be reached on Monday-Friday (8:30am-5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DLN
October 27, 2005

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